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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,783	09/23/2003	Hugh Walsh	MP0343	6403

50290 7590 08/04/2009

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JUNTIMA, NITTAYA	
ART UNIT	PAPER NUMBER
2416	
MAIL DATE	DELIVERY MODE
08/04/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/669,783	WALSH, HUGH	
	Examiner	Art Unit	
	NITTAYA JUNTIMA	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 April 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4, 7-17, 20-28, 31-34, and 37-60* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4, 7-17, 20-28, 31-34, and 37-60* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the amendment filed on 12/3/2008.

2. Claims 1-4, 7-17, 20-28, 31-34, and 37-60 are pending (claims 5-6, 18-19, 29-30, and 35-36 were cancelled).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 37-52 and 57-60 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims (as amended on 12/3/2008 and 4/29/2009) contain the following subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention:

in independent claim 37: *an ingress module configured to receive the pause frame (generated by the egress module as recited in line 12) from a source channel egress module, and, in response to the received pause frame, request the source channel to pause sending the frames of data having the one or more classes of service to be paused;*

in independent claim 44: *the means for receiving requests the source channel to pause sending frames of data having one or more of the classes of service to be paused upon receiving the pause frame (generated by the means for outputting as recited in line 13) from a source channel means for outputting;*

in independent claim 49*: causing the ingress module to request the source channel to cease to transmit the frames of data having the one or more classes of service to be paused;*

in independent claim 51: *instructions for causing a source channel ingress module to request the source channel to pause transmitting the frames of data having the one or more classes of service to be paused;*

in claim 38*: the ingress module is further configured to receive the pause release frame from the egress module; and in response to the received pause release frame, the ingress module requests the source channel to resume sending the frames of data having the one or more classes of service to be released;*

in claim 45: *the means for receiving requests the source channel resume transmitting the frames of data having the one or more of the classes of service to be released;*

in claim 50: *causing the ingress module to request the source channel to resume transmitting the frames of data having the one or more classes of service to be released;*

in claim 52*: instructions for causing the ingress module to request the source channel to resume transmitting the frames of data having the one or more classes of service to be released.*

Note that paragraphs 0011-0012 of the specification specifically disclose an ingress module of a network switching device that receives a pause frame and a pause release frame which are actually transmitted from another network device and an egress module of the same network switching device that ceases to transmit the frames and resume transmitting the frames in response to receiving the corresponding pause frame and the pause release frame. Also, paragraphs 0045, 0046, and 0050 explicitly disclose that the egress module exercises the flow control on the source channel by sending a pause frame to the source channel, and paragraphs

0050, 0052, and 0053 explicitly disclose that the egress module terminates flow control on the source channel by sending a pause release frame to the source channel. In addition, the structure of Fig. 4 explicitly shows that each ingress module 214 communicates to the queue controller 400 which communicates to each egress module 216 but shows no communication from any egress module to any ingress module.

Thus, nowhere in the specification or drawings discloses that an ingress module of a first switch receives the pause frame, which was generated by an egress of the first switch (claim 37, line 12 and claim 44, line 13), from an egress module of a second switch (a source channel egress module) and, in response, requests the second switch to pause sending the frames with CoS to the first switch as required in claims 37 and 44.

Nowhere in the specification or drawings discloses that an ingress module of a first switch requests a second switch to cease transmitting the frames with CoS to be paused following sending the pause frame to an ingress module of the second switch as required in claim 49.

Nowhere in the specification or drawings discloses instructions, which are for controlling the computer to control an ingress module and egress module of a first switch, for causing an ingress module of a second switch to request the second switch to pause transmitting the frames having CoS to be paused as required in claim 51.

Nowhere in the specification or drawings discloses transmission of a pause release frame within the same network switching device, i.e., from the egress module to the ingress module, and the ingress module request another switch to resume sending the frames in response receiving the pause release frame as amended in claims 38, 45, 50, and 52.

Please note that should the new matter be removed, the previous rejection dated 7/3/2008 still applies.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 37-48, 57-58, 51-52, and 60 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In independent claim 37, it is unclear why and how the ingress module receives the pause frame, which is actually generated by the egress module (see line 12), from an egress module of a source channel and then request the source channel to pause sending the frames. Therefore, the claim is vague and indefinite.

In independent claim 44, it is unclear why and how the means for receiving (i.e., ingress module) requests the source channel to pause sending frames upon receiving the pause frame, which is actually generated by the means for outputting (i.e., egress module) (see line 13), from means for outputting of the source channel. Therefore, the claim is vague and indefinite.

In independent claim 51, it is unclear why and how the instructions, which are for controlling the computer to control an ingress module and egress module of a first switch (see the preamble), can cause an ingress module of a second switch to request the second switch to pause transmitting the frames having CoS to be paused as required in claim 51.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. **Claims 1-2,7-11, 14-15, 20-22, 25-26, 31-32, and 53-56** are rejected under 35 U.S.C. 103(a) as being unpatentable over an art of record, Erimli (US 6,405,258 B1) in view of Chiussi (US 7,027,457 B1).

Regarding **claim 1**, Erimli teaches a network switching device (multiport switch 12, Fig. 1) comprising:

An ingress module (receiving means of the MAC unit 20, Figs. 1 and 2 that receives data from other device into the multiport switch 12) configured to receive frames of data from a first channel (RMII 18, Fig. 1 connecting first network station 14a) and store the frames of data in one or more buffers (buffers located in the external memory 36, Fig. 1). See col. 5, lines 14-27, col. 6, lines 11-13, 17-28, and col. 7, lines 32-41, 54-57. Wherein each frame of data has one or more plurality of classes of service (high priority frames and low priority frames (col. 6, lines 54-62).

One or more queues (output queues 58, Fig. 2, col. 8, lines 43-50).

A forwarding module (the port vector FIFO 56, Fig. 2) configured to enqueue each of the buffers by sending a pointer (the frame pointer) for each of the buffers to the one or more queues (output queues 58, Fig. 2) after the ingress module stores the frames of data in one or more of the one or more buffers (buffers located in the external memory 36, Fig. 1). See col. 15, lines 6-10.

An egress module (transmitting means, including output ports 90a and 90b in Fig. 6, of the MAC unit 20, Fig. 2 that transmits data from the multiport switch 12 to other device(s)) configured to retrieve the frames of data from the one or more buffers and transmit the retrieved frames of data to a second channel (a corresponding RMI 18 connecting second network station 14b). See col. 5, lines 14-22, col. 6, lines 11-13, and col. 7, lines 32-41, 57-62.

Wherein the egress module (transmitting means, including output ports 90a and 90b in Fig. 6, of the MAC unit 20, Figs. 1 and 2 that transmits data from the multiport switch 12) exercises a flow control (generating and transmitting a PAUSE frame) on the channel for each of the classes of service when the number of queue entries for the class of service exceeds a predetermined threshold for the class of service (output port 90a in Fig. 6 generates a PAUSE frame, col. 15, lines 11-46; see also col. 5, lines 14-22 and col. 7, lines 32-41, 57-62, col. 12, lines 57-61).

Although Erimli teaches (i) keeping track of the number of entries/frame pointers currently stored in the output queues 58, Fig. 2 for the respective queue priority, (ii) comparing the number the respective queue entries to the corresponding threshold value in order to determine whether to implement flow control (col. 11, lines 4-10, 65-col. 12, lines 37, 57-61, col. 15, lines 11-42), and (iii) returning the frame pointer after transmitting the data stored in a buffer for a frame received from the channel and having the respective class of service from the network switching device (fetching the frame data from the location in external memory 36 and storing the frame data into the transmit FIFO, then returning the frame pointer to the free buffer queue 64, col. 9, lines 4-23), Erimli does not explicitly teach that the tracking number of queue

entries/pointers is done by using a plurality of counters, storing a corresponding count, incrementing the count when the forwarding module enqueues one of the buffers, and decrementing the count after the stored data is transmitted, and exercising flow control when the count for the class of service exceeds the threshold as recited in the claim.

However, in an analogous art of packet transmission with flow control (col. 14, lines 30-56), Chiussi teaches using a plurality of counter 330 in Fig. 3 corresponding to different QoS levels to quantitatively keep track of the number of corresponding QoS queues (col. 6, lines 30-33; equivalent to tracking number of queue entries/frame pointers by a plurality of counters and storing a corresponding count) by incrementing a counter when data with an associated QoS is stored into one of the corresponding queues (step 720 in Fig. 7A and col. 12, lines 64-67; equivalent to incrementing count for a class of service) and decrementing the counter when data is removed from the queue (step 730 in Fig. 7B and col. 13, lines 48-52; equivalent to decrementing count for a class of service).

Given the teaching of Chiussi, it would have been obvious to one skilled in the art at the time the invention was made to apply Chiussi's concept of using a counter for tracking the number of queue entries for each class of service, including incrementing and decrementing counter value, into the system of Erimli such that a plurality of counters comprising one counter for each of the classes of service, wherein each of the counters is to store a count for the channel for a respective one of the classes of service, increment the count when the forwarding module enqueues one of the buffers storing the data of one of the frames having the respective class of

service, decrement the count after the data stored in a buffer for a frame received from the channel and having the respective class of service is transmitted from the network switching device, and the step of exercising flow control when the count for the class of service exceeds the threshold by the egress module would be included as claimed. The suggestion/motivation to do so would have been to track and monitor the number of queue entries (equivalent to number of entries/frame pointers) in each QoS queue for each class of service using a counter as taught by Chiussi (col. 12, lines 65-67 and col. 13, lines 48-51).

Regarding **claim 2**, Erimli also teaches that, wherein, to exercise flow control for one of the classes of service, the egress module (output port 90a, Fig. 6) is further configured to send a pause frame (PAUSE frame) to the first channel (RMII 18, Fig. 1 connecting first network station 14a), and wherein the pause frame indicates the one of the classes of service to be paused (the PAUSE frame includes Opcode field indicating whether the PAUSE frame corresponds to the high or low priority threshold value). See col. 15, lines 37-46; see also col. 12, lines 57-61 and col. 13, lines 36-40.

Regarding **claim 10**, Erimli also teaches a memory (external memory 36, Fig. 1) comprising the buffers (col. 6, lines 17-28).

Claims 8, 14, and 15 are network switching device claims containing similar limitation as recited in device claims 1, 1, 2, respectively, and are therefore rejected under the same reason set forth in the rejection of claims 1, 1, 2, respectively.

Claims 7, 11, and 20 are integrated circuit (CPU 32, SSRAM 36, and multiport switch 12 in Fig. 1 constitute an integrated circuit) claims comprising the network switching device of claims 1, 10, and 14, respectively, and are therefore rejected under the same reason set forth in the rejection of claims 1, 10, and 14, respectively.

Claim 21 is a network switch (CPU 32, SSRAM 36, and multiport switch 12 in Fig. 1 constitute a network switch) comprising the network switching device of claim 14 and is therefore rejected under the same reason set forth in the rejection of claim 14.

Claims 9 and 22 are output-queued network switch (CPU 32, SSRAM 36, and multiport switch 12 in Fig. 1 constitute an output-queued network switch) claims comprising the network switching device of claims 1 and 14, respectively, and are therefore rejected under the same reason set forth in the rejection of claims 1 and 14, respectively.

Claims 25-26 are method claims corresponding to device claims 1-2, respectively, and are therefore rejected under the same reason set forth in the rejection of claims 1-2, respectively.

Claims 31 and 32 are computer readable medium claims containing instructions for controlling an apparatus similar to device in claims 1 and 2, respectively and are therefore rejected under the same reason set forth in the rejection of claims 1 and 2, respectively with an exception that Erimli does not teach that the instructions are executable by a computer and

embodied in a computer program stored on a computer readable medium. However, an Official notice is taken that it is well known in the art to implement the instructions as a computer program to be executable by a computer and store on a computer readable medium for easy installation and portability purposes. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the teaching of Erimli such that the instructions would be executable by a computer and embodied in a computer program stored on a computer readable medium as claimed for easy installation and portability purposes.

Regarding **claims 53, 54, 55, and 56**, Erimli further teaches that the predetermined threshold is a dynamic pause threshold (col. 12, lines 17-22).

6. **Claims 3-4, 12-13, 16-17, 23-24, 27-28, and 33-34** are rejected under 35 U.S.C. 103(a) as being unpatentable over an art of record, Erimli (US 6,405,258 B1) in view of Chiussi (US 7,027,457 B1), and further in view of Feuerstraeter (hereinafter "Feuer") (US 2003/0123393 A1).

Regarding **claims 3 and 4**, Erimli does not teach that the egress module is further configured to terminate flow control on the channel for each of the classes of service by sending a pause release frame indicating the one of the classes of service when the count for the class of service but not yet transmitted from the network switching device falls below a further predetermined threshold.

However, in an analogous art of flow control, Feuer teaches that a flow control agent 214 in Fig. 2 (equivalent to the egress module) performs a flow control by generating a control

message in order to suspend transmission of content having a priority level associated with buffer queue 302, 304, or 306 in Fig. 3 (equivalent to the buffers storing frames of data having the class of service) whose number of occupied memory locations has reached a threshold 308 (paragraphs 32-33) and issuing a revised control command (equivalent to a pause release frame) denoting the priority level associated with the buffer queue that becomes available/falls below threshold 308and transmitting it via channel 106 in Fig. 1 (paragraph 21) to an upstream device when the buffer queue associated with the priority level becomes available/falls below threshold 308,Fig. 3 in order to refresh a disable of communicate (paragraph 44, see also paragraphs 33 and 39, lines 15-22) (equivalent to terminating flow control on the channel for each of the classes of service by sending a pause release frame indicating the one of the classes of service when the count for the class of service falls below a further predetermined threshold for the class of service.

Given the teaching of Feuer, it would have been obvious to one skilled in the art at the time of the invention to further modify the combined teaching of Erimli and Chiussi to apply the concept of issuing a revised control command such that the egress module would be further configured to terminate flow control on the channel for each of the classes of service by sending a pause release frame indicating the one of the classes of service when the count for the class of service but not yet transmitted from the network switching device falls below a further predetermined threshold as claimed. The suggestion/motivation to do so would have been to enable the transmission when the buffer (e.g., queue) associated with the priority level becomes available/falls below the threshold as taught be Feuer (paragraph 44).

Regarding **claims 12 and 13**, Erimli teaches a reserve module (output queue 58 in Fig. 2/400, Fig. 5A) configured to reserve one or more buffers (one or more buffers reads on a maximum number of memory location(s) in output queue 58/400, Fig. 5A that are allocated for storing frame pointers, col. 15, lines 6-43; see also col. 12, lines 15-22) to the channel (RMII 18, Fig. 1), wherein a pause threshold/a pause release threshold (both are not further defined, read on a value of the low priority watermark threshold for triggering the transmission of a PAUSE frame) for the channel is a function of the number of the buffers reserved to the channel (a value of the low priority watermark threshold is a maximum number of entries that are allowed in the output queue; col. 12, lines 15-22 and col. 15, lines 22-43).

Claims 16, 17, and 23/24 are network switching claims containing similar limitation as recited in device claims 3, 4, and 13, respectively, and are therefore rejected under the same reason set forth in the rejection of claims 3, 4, and 13, respectively.

Claims 27 and 28 are method claims corresponding to device claims 3 and 4, respectively, and are therefore rejected under the same reason set forth in the rejection of claims 3 and 4, respectively.

Claims 33 and 34 are computer readable medium claims containing instructions for controlling an apparatus similar to device in claims 3 and 4, respectively and are therefore rejected under the same reason set forth in the rejection of claims 3 and 4, respectively.

Response to Arguments

7. Applicant's arguments filed on 4/29/2009 have been fully considered but they are not persuasive.

A. In the remarks on page 22 regarding 112, first paragraph rejection, the applicant argues that Figs. 2 and 4 support the amended portions made to claims 37-38, 44-45, 49-52 and that the specification discloses that (a) the two separate switches may be used such that a pause/pause release frame is sent from an egress module of one switch to an ingress module of another switch, or (b) a pause/pause release frame may be sent from an egress module to an ingress module within the same switch.

In response, the examiner respectfully disagrees.

Firstly, although the specification and Figs. 2 and 4 supports (a), the specification and drawings do not explicitly nor implicitly support (b), as argues by the applicant. Specifically, paragraphs 0011-0012 of the specification explicitly disclose an ingress module of a network switching device that receives a pause frame and a pause release frame which are actually transmitted from another network device and an egress module of the same network switching device that cease to transmit the frames and resume transmitting the frames in response to receiving the corresponding pause frame and the pause release frame. Also, paragraphs 0045, 0046, and 0050 explicitly disclose that the egress module exercises the flow control on the source channel by sending a pause frame to the source channel, and paragraphs 0050, 0052, and 0053 explicitly disclose that the egress module terminates flow control on the source channel by sending a pause release frame to the source channel. In addition, the structure of Fig. 4 explicitly shows that each ingress module 214 communicates to the queue controller 400 which

communicates to each egress module 216 but shows no communication from any egress module to any ingress module. Note that item (b) may be obvious but is definitely not inherent in the original disclosure.

Secondly, the amended independent claims 37, 44, 49, and 51 do not claim (a) or (b). However, they now claim the following portions which are not supported by the original disclosure as follows:

In independent claim 37: *an ingress module configured to receive the pause frame (generated by the egress module as recited in line 12) from a source channel egress module, and, in response to the received pause frame, request the source channel to pause sending the frames of data having the one or more classes of service to be paused* -- – in other words, nowhere in the specification or drawings discloses that an ingress module of a first switch receives the pause frame, which was generated by an egress of the first switch (claim 37, line 12), from an egress module of a second switch (a source channel egress module) and, in response, requests the second switch to pause sending the frames with CoS to the first switch. How does the ingress module request the source channel to pause frame transmission upon receiving the pause frame from the source channel's egress module but the pause frame is generated by the egress module?

In independent claim 44: *the means for receiving requests the source channel to pause sending frames of data having one or more of the classes of service to be paused upon receiving the pause frame (generated by the means for outputting as recited in line 13) from a source channel means for outputting* – in other words, nowhere in the specification or drawings discloses that an ingress module of a first switch receives the pause frame, which was generated

by an egress of the first switch (claim 44, line 13), from an egress module of a second switch (a source channel egress module) and, in response, requests the second switch to pause sending the frames with CoS to the first switch. How does the ingress module request the source channel to pause frame transmission upon receiving the pause frame from the source channel's egress but the pause frame is generated by the egress module?

In independent claim 49*: causing the ingress module to request the source channel to cease to transmit the frames of data having the one or more classes of service to be paused* -- in other words, nowhere in the specification or drawings discloses that an ingress module of a first switch requests a second switch to cease transmitting the frames with CoS to be paused following sending the pause frame to an ingress module of the second switch as required in claim 49. How does the ingress module request the source channel to cease frame transmission?

In independent claim 51: *instructions for causing a source channel ingress module to request the source channel to pause transmitting the frames of data having the one or more classes of service to be paused* – in other words, nowhere in the specification or drawings discloses instructions, which are for controlling the computer to control an ingress module and egress module of a first switch, for causing an ingress module of a second switch to request the second switch to pause transmitting the frames having CoS to be paused as required in claim 51. How can instructions for an ingress module of a computer control another ingress module of another computer? How the other ingress module requests its source channel to pause transmitting the frames?

Thirdly, the amended dependent claims 45, 50, and 52 claim (b) as follows:

in claim 38*: the ingress module is further configured to receive the pause release frame from the egress module; and in response to the received pause release frame, the ingress module requests the source channel to resume sending the frames of data having the one or more classes of service to be released;*

in claim 45: *the means for receiving requests the source channel resume transmitting the frames of data having the one or more of the classes of service to be released;*

in claim 50: *causing the ingress module to request the source channel to resume transmitting the frames of data having the one or more classes of service to be released;*

in claim 52*: instructions for causing the ingress module to request the source channel to resume transmitting the frames of data having the one or more classes of service to be released.*

However, as explained above, nowhere in the specification or drawings discloses (b) - transmission of a pause release frame within the same network switching device, i.e., from the egress module to the ingress module, and the ingress module request another switch to resume sending the frames in response receiving the pause release frame as amended in claims 38, 45, 50, and 52. Specifically, the specification and drawings fail to teach how a pause release frame can be communicated from the egress module to the ingress module and how the ingress module request another switch to cease the flow control.

Therefore, it is respectfully submitted that claims 37-38, 44-45, and 49-52 as amended are not supported by the original disclosure and the rejection is maintained.

B. In the remarks on pages 23-24, regarding claim 1, the applicant argues that none of the cited references discloses the limitation "counter configured to store a count..is transmitted from

the network switch device" because the counters in Chiussi count the number of packets in the QoS channel but do not count the number of pointers (for the buffers storing received data frames) that have been sent to the corresponding queues, therefore, Chiussi does not disclose or suggest "increment the count when the forward module enqueues one of the buffers storing one of the frames of data having the respective class of service" as recited in claim 1.

In response, the examiner disagrees. It is true that Chiussi does not teach the counters for counting the number of pointers (for the buffers storing received data frames) that have been sent to the corresponding queues. However, Chiussi is relied upon for teaching the use of counters to track queue entries by incrementing or decrementing a count (see Chiussi, col. 6, lines 30-33 for use of counters to store counts; step 720 in Fig. 7A and col. 12, lines 64-67 for incrementing a count; and step 730 in Fig. 7B and col. 13, lines 48-52 for decrementing count). The applicant also acknowledged Chiussi teaching in the remarks submitted on 12/3/2008.

Note that Erimli teaches **a forwarding module** (the port vector FIFO 56, Fig. 2) **that enqueues** each of the buffers by sending a pointer (the frame pointer) for each of the buffers to the one or more queues (output queues 58, Fig. 2) after the ingress module stores the frames of data in one or more of the one or more buffers (buffers located in the external memory 36, Fig. 1). See col. 15, lines 6-10. Erimli also teaches **keeping track of the number of entries/frame pointers currently stored in the output queues 58, Fig. 2 for the respective queue priority** and that each frame pointer is input to the queue by the forwarding module (port vector FIFO 46). See col. 11, lines 4-10, col. 12, lines 12-22, 57-61. Erimli also teaches **returning the frame pointer after transmitting the data** stored in a buffer for a frame received from the channel and having the respective class of service from the network switching device (fetching

the frame data from the location in external memory 36 and storing the frame data into the transmit FIFO, then returning the frame pointer to the free buffer queue 64, col. 9, lines 4-23),

However, what Erimli does not explicitly teach is how the frame pointers are tracked, i.e., by using the counters to increment/decrement counts. Since Chiussi teaches the use of counters and the increment/decrement of a count, it would have been obvious to one skilled in the art to apply Chiussi's use of counters for tracking queue entries by incrementing or decrementing a count to the system of Erimli such that the limitation "counter configured to store a count...and decrement the count after the frame of data ...is transmitted from the network switch device," specifically, "increment the count when the forward module enqueues one of the buffers storing one of the frames of data having the respective class of service" would be included as recited in claim 1.

In addition, the applicant fails to point out an error in the motivation and did not argue about the incorporation of Chiussi to support the use of counters when it was first introduced in the previous Final rejection dated 7/3/2008. Based on the above explanation, it is submitted that the limitation "counter configured to store a count...and decrement the count after the frame of data ...is transmitted from the network switch device" is met by the combined teaching of Erimli and Chiussi.

C. In the remarks on pages 24-25 regarding claim 1, the applicant further argues that none of the cited references disclose the limitation "an egress module configured to ..transmit the retrieved frames of data to a second channel, and exercise flow control on the first channel for each of the classes of service when the count for the class of service exceeds a predetermined

threshold for the class of service" because Erimli does not disclose that the output port 90b in Fig. 6 exercises flow control on the station 1 while sending the data frame originated from station 1 to station 2.

In response, the examiner respectfully disagrees. It is submitted that Erimli teaches an egress module that sends the frames of data retrieved from the buffers to the second channel and exercises flow control on the first channel as claimed. Erimli clearly teaches **an egress module** (transmitting means, including output ports 90a and 90b in Fig. 6, of the MAC unit 20, Figs. 1 and 2 that transmits data from the multiport switch 12) **configured to retrieve the frames of data from the one or more buffers and transmit the retrieved frames of data to a second channel** (a corresponding RMI 18 connecting second network station 14b) (col. 5, lines 14-22, col. 6, lines 11-13, and col. 7, lines 32-41, 57-62) **and exercise a flow control** (generating and transmitting a PAUSE frame) **on the channel for each of the classes of service when the number of queue entries for the class of service exceeds a predetermined threshold for the class of service** (output port 90a in Fig. 6 generates a PAUSE frame, col. 15, lines 11-46; see also col. 5, lines 14-22 and col. 7, lines 32-41, 57-62, col. 12, lines 57-61).

In other words, **the transmission of the data frames to the second channel** (network station 14b in Fig. 6) and **the transmission of the pause frame to the first channel** (network station 14a in Fig. 6) **are via the transmission means of the MAC unit 20 of Fig. 1**, which includes output port 90a and output port 90b in Fig. 6, because is the MAC unit 20 is the only unit of the switch 12 that connects to network stations 14 as shown in Fig. 1. In addition, the interpretation of transmitting means of the MAC unit 20 in Figs. 1 and 3A of Erimli is consistent with an egress module shown in Figs. 2 and 4 of the application as both an ingress module and

receiving means perform receiving function, while both an egress module and transmitting means perform transmitting function.

Therefore, since there is no structural nor functional difference between the claimed egress module and Erimli's transmission means of the MAC unit 20 of Fig. 1, it is respectfully submitted that the claimed limitation "an egress module configured to ..transmit the retrieved frames of data to a second channel, and exercise flow control on the first channel for each of the classes of service when the count for the class of service exceeds a predetermined threshold for the class of service" as recited in the amended claim 1 is clearly met by Erimli.

D. Based on the explanation provided in B and C above, the rejection of claim 1 is maintained.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NITTAYA JUNTIMA whose telephone number is 571-272-3120. The examiner can normally be reached on Monday through Friday, 9:00 A.M - 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nittaya Juntima/
Primary Examiner, Art Unit 2416
8/3/2009